

Notice of Allowability

Application No.

10/616,979

Examiner

Tom V. Sheng

Applicant(s)

NAKAMURA ET AL.

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 1/3/2007.
2. ☒ The allowed claim(s) is/are 24,25 and 27.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

Allowable Subject Matter

1. Claims 24, 25 and 27 are allowed.
2. The following is an examiner's statement of reasons for allowance:

The invention is directed to a matrix display with light sensors corresponding to display elements in the matrix display. A/D converters are provided to convert sensor output into digital signals. A shift register converts the digital signals into a plurality of serial signals and a selector/multiplexer subsequently selects from the plurality of serial signals.

Independent claim 24 identifies, inter alia, the uniquely distinct features "wherein said shift register has: a first shift register which converts said digital signal of m (m is an integer equal to or more than 2) bits into a first serial signal and outputs the first serial signal; a second shift register which converts said digital signal of n (n is an integer equal to or more than 2) bits into a second serial signal and outputs the second serial signal; and a serial signal selector which selects either of said first or second serial signal and outputs the selected signal."

Independent claim 25 identifies, inter alia, the uniquely distinct features "a plurality of shift registers formed on said insulation substrate which convert said digital signals into a plurality of first serial signals and output said first serial signals; and a serial signal selector formed on said insulation substrate which selects one of said plurality of first serial signals outputted from said plurality of first shift registers and outputs the selected signal."

Independent claim 27 identifies, inter alia, the uniquely distinct features "wherein said serial output part includes: a first shift register which converts said digital signal of m (m is an integer equal to or more than 2) bits into a first serial signal and outputs the first serial signal; a second shift register which converts said digital signal of n (n is an integer equal to or more than 2) bits into a second serial signal and outputs the second serial signal; and a serial signal selector which selects either of said first or second serial signal and outputs the selected signal."

Ogawa et al. (US 6,243,069 B1) teaches an active matrix liquid crystal display with photodiodes coupled to corresponding liquid crystal elements. An A/D converter is connected to source lines outputting read picture data. A line memory holds the A/D converted picture data and outputs the data serially according to timing signals from a shift register. The line memory of Ogawa only provides one serial data stream and thus does not teach or render obvious the use of multiple serial signals and the proceeding selection of a serial signal as output, as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Sheng

AMR A. AWAD
SUPERVISORY PATENT EXAMINER
Amr Awad